1st and Part Bill.

M. A. R. 57 (Rule 116) **No. D**

Measurement Book

Serial No. .....

114859

Name of work ..... From ..... To .....

Name of Contractor of nature of Agency.....

Date of commencement of work.....

Date	Full description, etc, of work	Number	Dimensions			Contents	Reference to last Measurement
			Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	Name of work: Improvements to roads and drains and other developmental works in Attur ward No-03 under Road development head in chief minister Navanagarothana of Yelahanka division (Package-02)						
	Job Code : 003-20-000086						
	Est Cost : Rs=14.00.Cr.						
	Name of Agency : Sri. M.S. Venkatesh, M/s M.S.V. Constructions Company.						
	Work order No : BBMP/EE/YNK/D/EPMT-12/W.O./4/2020-21. Dtd: 14.05.2020.						
	Measurement recorded on:						

MEASUREMENT BOOK

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
Item No:1	KSRRB 200-8. Clearing and grubbing road land including uprooting rank Vegetation grass bushes, shrubs and trees of girth upto 300mm by manual means in area of lights jungles removal of stumps disposal of unserviceable materials stacking of serviceable materials, labour charges Complete as per Specifications.					1213.37 Sqm @TR 11.13 = 13504.81/-	
Item No:2	KSRRB 300-49. Scarifying bituminous Course 50mm to 75mm thick along with premix Carpet / surface dressing by manual means without disturbing the base and stacking of the debris materials including cost of all labours charges Complete as per specification. MORTH / Chapter 3					28672.40 Sqm. @TR 100.17 = 2872114.31/-	

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Measurement Book

Serial No. .....

Name of work ..... From ..... To .....

Name of Contractor of nature of Agency.....

Date of commencement of work.....

114860

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
Item No:3	KSRRB 300-45. Scarifying stone metal Crust 50mm to 100mm thick with pick axels along with pre mix Carpet / surface dressing and stacking of old serviceable materials by manual means including of cost of labour charges Complete as per Specification. MORTH / Chapter 3					0.00 Sqm @TR 89.04 = 0.00/-	
Item No:4	KSRRB M300-59.2. Loosening levelling and Compacting original ground Supporting embackment to facilitate placement of first layer of embankment/ subgrade Scarified to a depth of 150mm mixed with water at OMC and then Compacted by rolling so as to achieve minimum dry density as given in table						

MEASUREMENT BOOK

Date	Full description, etc, of work	Dimensions: Number	Length	Breadth	Depth	Contents	Reference to last Measurement
1	2	3	4	5	6	7	8
	300-2 for embackment/ sub grade including HAM Construction, labour etc, Complete as per Specification. MORTH Specification No. 305.3.4.					50943.64 Sqm	
					@TR	25.60	= 1304157.18/-
Item No:5	KSRRB M300-14 Excavation for roadwork in all types of soil by mechanical means including cutting and loading to tippers, trimming bottom and side slopes, in accordance with requirement of lines, grades and Cross sections, and transportation with a lead of 1.00 km and Complete.					12731.99 Cum	
					@TR	45.63	= 580960.65/-

M. A. R. 57 (Rule 116) No. D
Measurement Book

Serial No. .....
Name of work ..... From ..... To 114861
Name of Contractor of nature of Agency .....
Date of commencement of work .....

Date	Full description, etc, of work	Dimensions: Number	Length	Breadth	Depth	Contents	Reference to last Measurement
1	2	3	4	5	6	7	8
Item No:6	KSRRB M300-19 Removal of unserviceable soil including excavation, loading and disposal but excluding replacement by suitable soil which shall be paid separately as per Clause 300.5 Complete as per specifications. MORTH Specification No. 301.					12730.31 Cum	
					@TR	36.73	= 467584.25/-
Item No:7	Construction of granular sub-base Grading-V as sub base and drainage layer by providing Coarse graded Crushed stone aggregates of granite/ trap/ basalt materials, mixing by mix in place method by rotavatory at OMC spreading in uniform layers with motor grader on prepared surface and						

MEASUREMENT BOOK

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	Compacting with Vibrator power roller to achieve the 98% proctor density. Complete as per Specifications. Clause 401 of MORTH V revision.					7731.69 Cum	
					@TR	1947.75 = 15059407.96/-	
Item No:8	KSRRB M400-17: Providing, laying, spreading and Compacting Crushed Stone aggregates of granite/trap/basalt to wet mix macadam specification including pre-mixing the materials with water at one in mechanical mix plant Carriage of mixed materials by tippers to site, laying in uniform layers with paver in sub-base/base Course on well prepared surface and Compacting with Vibratory rollers to achieve the desired density Complete as per specifications.					12569.41 Cum	
					@TR	2101.34 = 26412604.01/-	

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Measurement Book

Serial No. .....

114862

Name of work ..... From ..... To .....

Name of Contractor of nature of Agency.....

Date of commencement of work.....

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
Item No:9	KSRRB 500-2: Cleaning the existing black topped surface with brooms soft brush and finally dusting with old gunny bags and/or Compressed air to achieve bituminous treatment including cost of all materials, labour, HOM of mechanical Complete as per specifications.					13190.05 Sqm	
					@TR	5.56 = 73336.68/-	
Item No:10	KSRRB M500-6. Providing and applying prime Coat with S.S. bitumen emulsion on prepared surface of granular base such as WMM including cleaning of roads surface and spraying primer at the rate of 0.60 kg per Sqm using mechanical means Complete as per Specifications. MORTH Specification No. 502						

MEASUREMENT BOOK

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
						48774.08 Sqm	
						@TR 35.62 = 1737332.73/-	
Item No.11	KSRRB 500-7: Providing and applying tack Coat using 80/100 grade bitumen (VG10) on the prepared black topped surface at 0.25kg per sqm heating bitumen in boiler fitted with spray set (excluding Cleaning of road surface) including Cost of all materials, labour, HOM of machineries, Complete as per specifications. MORTH Chapter-5.					55910.51 Sqm.	
						@TR 13.36 = 746964.41/-	
Item No:12	KSRRB MS00-17. Providing and laying dense graded bituminous macadam using Crushed aggregate of specified grading, premixed with VG-30 grade bituminous binder and transporting the hot mix to work site,						

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Measurement Book

Serial No. .....

Name of work ..... From ..... To .....

Name of Contractor of nature of Agency .....

Date of commencement of work .....

114853

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	laying to the required grade, level and alignment, rolling with Smooth wheeled, Vibratory and tandem rollers to achieve the desired Compaction as per MORTH table 500-10 Complete in all respects Complete as per specification MORTH Specification No 507. using 100/120 TPH Capacity HMP with Sensor paver Gr-II (50mm to 75mm) with 4.5% VG-30 Bitumen.					2448.36 Cum	
						@TR 8001.36 = 19590201.77/-	
Item No.13	Providing and laying bituminous Concrete 40mm thick with hot mix plant, using 40-60 TPH Capacity HMP with mechanical paver grading "(30-45mm) with 5.4% of modified bituminous binder consisting of 4.97% of VG-30						

MEASUREMENT BOOK

Date	Full description, etc. of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	bitumen (60/70 grade) and 0.43% of plastomeric thermoplastic (waste plastic) crushed aggregates of specified grading pre-mixed with bituminous binder and filler, transporting the hot mix to the work site, laying with a paver finisher to the required grade, level and alignment and rolling with the smooth wheeled, vibratory and tandom rollers to achieve the desired Compaction in all respect Complete as per specifications. Clause 507 of MORTH. V revision as per IRC SP-53-2015.					2236.42 Cum.	
						@TR 9134.39 = 20428336.14/-	
Item NO.14	Providing and Constructing dry lean Cement Concrete mix CC 1:5:10 base with OPC 25mm down size graded granite metal Coarse aggregates at 0.86cum and fine aggregates @ 0.58cum over a prepared						

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Measurement Book

Serial No. .....

Name of work ..... From ..... To .....

114864

Name of Contractor of nature of Agency.....

Date of commencement of work.....

Date	Full description, etc. of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	sub-base, Coarse and fine aggregates Conforming to IS: 383-2016, aggregates gradation after blending to be as per table 600-1 optimum moisture Content to be determined during trial length Construction Concrete Strength not to be less than 10mpa at 7 days mixed in a batch mixer plant transported to site, laid with a paver, Compacting with 8-10 tonnes Vibratory roller.					105.71 Cum	
						@TR 3990.10 = 421803.45/-	
Item NO.15	Constructing un-reinforced plain Cement Concrete for pavements using grade Concrete M-30 over a prepared base with OPC Coarse aggregates						

MEASUREMENT BOOK

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	0.69 Cum fine aggregate at 0.46 Cum Coarse and fine aggregates Conforming to IS: 383-2016, with superplastisizer at 3 lts Conforming to IS: 9103-2008 mixed in a Concrete mixer of not les than 0.6 Cum Capacity and appropriate weight batcher as per approved mix design laid in approved fixed side form work and spreading the Concrete with shovels, rackers Compacted using needles screed and plate Vibrator and finished with floaters in a Continuous operation including provision of Contraction and Cover the surface by gunny bags for Curing.					140.95 Cum	
						@TR 5471.51 : 771209.33/-	

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Measurement Book

Serial No. .....

Name of work ..... From ..... To .....

114865

Name of Contractor of nature of Agency.....

Date of commencement of work.....

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
Item NO116	MSRRB M800-35: Supply and Installation of molded shank raised pavement markers made up of poly Carbonate and ABS (Acrylonitrile Butadiene styrene) molded body and reflecting pannels with microprismatic lens Capable of providing total internal reflection of the light entering the lens face and shall support load of 16000 KG tested in accordance to Specifications of Category A of MORTH Circular NO. RW/NH/33023/10-97-DO III Dt. 11.06.1997. The height width and length shall not exceed 50mm, 100mm and 102mm and with minimum reflective area of 135 sq cm on each side and the slope to the base shall be 35. the strength of						

MEASUREMENT BOOK

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	detachment of the integrated cylindrical shanks (of diameter not less than 19mm and height not less than 30mm) from the body is to be a minimum value of 500KG. fixing will be by drilling hole on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer recommendations and Complete as directed by the Engineer.					2781.00 No's	
						@TR 375.08 = 1020485.51/-	
Item NO.17	KSRRB M800-13. Road marking with hot applied thermoplastic Compound with reflectorising glass beads on bituminous Surface/ Concrete Surface: Providing and laying of hot applied thermoplastic						

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Measurement Book

Serial No. .....

Name of work ..... From ..... To .....

Name of Contractor of nature of Agency.....

Date of commencement of work.....

114866

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	Compound 2.5mm thick including reflectorising glass beads at 250gms per Sqm area thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35 standards specified. Complete as per specifications					3388.66 Sqm	
						@TR 477.48 = 1618014.99/-	
Item NO.18	KSRB 15-19.1: Providing and applying ready mix priming Coat over Concrete/ Masonry / Asbestos Cement Sheet/ plastered Surface including Preparing the Surface after thoroughly cleaning of oil, grease, dirt and other foreign matter and sand papering including Cost of all						

MEASUREMENT BOOK

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	materials, labour Complete as per specifications.					0.00	Sqm.
						@TR 41.18	= 0.00/-
Item NO:19	KSRB 15-19.2: Providing and applying spray painting over Concrete/ masonry /asbestos Cement sheet/ plastered surfaces with flat wall paint of approved brand to gave even shade after cleaning the surface of all dirt dust and other foreign matter and sand papering including Cost of all materials, labour, Complete as per Specifications.					0.00	Sqm.
						@TR 61.22	= 0.00/-
Item NO:20	Supplying and fixing of retro reflective Single Arrow road name						

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Measurement Book

Serial No. .....

Name of work ..... From ..... To .....

114867

Name of Contractor of nature of Agency .....

Date of commencement of work .....

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	Sign board of Size 600mm x 900mm made out of retro reflective Sheeting Conforming to type XI Standard of ASTM D 4956-09 & as per IRC 67-2012 ... etc Complete as per specifications.					0.00	Sqm.
						@TR 14799.56	= 0.00/-
Item No:21	Supply and fixing of medium duty SFRC Frame and Cover Conforming to IS 12592 (Part-1)-1988 and IS 12592 (Part-2)-1991 with latest amendment including Cutting slab to the required size for the opening ... etc Complete as per specifications.					0.00	Sqm
						@TR 2313.93	0.00/-

MEASUREMENT BOOK

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
Item NO:22	Providing and laying plain/reinforced Cement Concrete for drain walls and bottom thickness 15cm using M20 nominal mix Concrete with OPC at 300kgs with 20mm and down size granite metal Coarse aggregates at 0.69cum and fine aggregates at 0.43cum ....etc Complete as per specifications.					0.00 Cum.	
						@TR 7637.41 = 0.00/-	
Item NO:23	KSRRB M100-1. Loading and unloading of stone boulder stone aggregates IS and/Kankar Imcorum. placing tipper at loading point. loading with front end loader, dumping... etc Complete as per Specifications.					0.00 Cum.	
						@TR 63.44 = 0.00/-	

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Measurement Book

Serial No. .....

114858

Name of work ..... From ..... To .....

Name of Contractor of nature of Agency.....

Date of commencement of work.....

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
Item NO:24	KSRRB M100-4.1. Cost of haulage excluding loading and unloading. MORTH-100/chapter-1 Case 1: Surface road.					0.00 t.km	
						@TR 2.23 = 0.00/-	
Item NO:25	KSRRB M2900-1. Plain Cement Concrete M10 mix with Crushed stone aggregates 40mm nominal size mechanically mixed, placed in foundation and Compacted by Vibration including Curing, Cost of materials, labours HOM Complete as per specifications.					53.25 Cum	
						@TR 4703.54 = 250463.51/-	

MEASUREMENT BOOK

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
Item No:26	Providing and fixing precast solid concrete Kerb stones of size 450x200x400mm made out of CC 1:2:4 and finished with CM 1:3 plastering and finishing Cutting etc Complete.					0.00 No's	
						@TR 454.10 = 0.00/-	
Item No:27	Removing and resetting of kerb stones.					0.00 No	
						@TR 110.19 = 0.00/-	
Item No:28	KSRRB 800-1. Painting two coats after filling surface with Synthetic enamel paint in approved shades on new plastered Concrete						

M. A. R. 57 (Rule 116) No. D

Measurement Book

Serial No. .....

Name of work ..... From ..... To .....

Name of Contractor of nature of Agency .....

Date of commencement of work .....

114869

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	Surface with materials, labour Complete as per specifications.					0.00 Sqm	
						@TR 89.04 = 0.00/-	
Item NO:29	KSRB 14.6-1: Providing and laying heavy duty Cobble stones 60mm thick interlock pavers, using Cement and Course Sand for manufacture of blocks of approved size, shape and Colour with a minimum Compressive strength of 281 Kg per Sqm over 50mm thick Sand bed (average thickness) and compacting with plate Vibrator having 3 tons Compaction force thereby forcing part of Sand underneath to come up in between joints, final						

MEASUREMENT BOOK

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	Compaction of paver surface joints, final Compaction of paver surface joints into its final level, including cost of materials, Labours, and Hire of machineries Complete as per specifications.					3070.44 Sqm.	
						@TR 1171.99 = 3598524.98/-	
Item NO: 30	Removing and resetting of footpath slabs.					1078.68 Sqm.	
						@TR 219.26 = 236511.38/-	
Item NO: 31	KSRRB 300-1: Earthwork excavation by manual means for drains and similar works in ordinary soil excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods Complete as per specifications.					53.25 Cum	
						@TR 144.69 = 7704.74/-	
Item NO: 32	KSRRB M2200-6: Providing TMT bars Fe500 Steel reinforcement for RCC work including straightening, Cutting, bending, hooking, placing in position lapping and/or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary Complete as per specifications.					1.40 Tonnes	
						@TR 7594333 = 106138.98/-	

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Measurement Book

Serial No. .....

Name of work ..... From ..... To .....

Name of Contractor of nature of Agency .....

Date of commencement of work .....

114870

MEASUREMENT BOOK

Date	Full description, etc. of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
Item No:33	Providing and laying plain/reinforced Cement Concrete for drain walls and bottom thickness 15cm using M20 nominal mix Concrete with OPC at 300kgs with 20mm and down size granite metal Coarse aggregates at 0.69cum and fine aggregates at 0.43cum machine mixed, well Compacted for walls and bottom including Centering, Shuttering, Cost of materials, HOM of machinery, Curing etc, Complete as per Specification.					25.03 Cum.	
						@TR 7423.71 = 185796.90/-	
Item No:34	Providing and fixing precast reinforced Concrete Slab 10cm thick of mix M20 using 20mm and down size graded granite metal						

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Measurement Book

Serial No. .....
Name of work ..... From ..... To .....
Name of Contractor of nature of Agency .....
Date of commencement of work .....

114871

Date	Full description, etc. of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	using reinforcement 10mm dia steel at 150mm c/c both ways.					0.00 Sqm.	
						@TR 2453.85 = 0.00/-	
Item No:35	Providing and laying Precast drain Cover slabs of 250mm thick of mix M20 using graded granite jelly 20mm & down size with steel reinforcement Complete as per specifications.					53.25 Sqm.	
						@TR 5688.90 = 302933.93/-	

MEASUREMENT BOOK

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
Item No: 36	Removing and resetting of stone slabs of drains and pointing in CM 1:3.					0.00 Sqm.	
					@TR	110.25 = 0.00/-	
Item No: 37	KSRRB M200-15.1. Dismantling of existing structures like culverts bridges retaining walls and other structures Comprising of masonry Cement Concrete wood work etc, Complete as per specifications.					14.20 Cum	
					@TR	321.66 = 4567.57/-	
Item No: 38	KSRRB M200-26. Dismantling Kerb stones by manual means						

M. A. R. 57 (Rule 116) No. D

Measurement Book

Serial No. .....

Name of work ..... From ..... To 114872

Name of Contractor of nature of Agency .....

Date of commencement of work .....

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	and disposal of dismantled materials, with all lifts and Complete as per Specification. MORTH Specification No. 2002.					0.00 m	
					@TR	13.36 = 0.00/-	
Item No. 39	KSRRB M200-24. Dismantling of Cement Concrete pavement by mechanical means using pneumatic tools breaking to pieces not exceeding 0.02 Cum in Volume and stock piling at dismantled location and disposal of dismantled materials, Stacking Serviceable and unserviceable						

MEASUREMENT BOOK

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	materials. Separate Specification NO. 202.	Complete as per specifications. MORTH				412.23 Cum.	
						@TR 1000.59 = 412476.22/-	
						Sub-Total = 9,82,23,136.38/-	
						Add 12% GST charges = 1,17,86,776.37/-	
						Grand Total = 11,00,09,912.75/-	
	C&FC 25/11/2021						25/11/2021 AE

M. A. R. 57 (Rule 116) No. 114873
Measurement Book

Serial No. .....
Name of work ..... From ..... To .....
Name of Contractor of nature of Agency.....
Date of commencement of work.....

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8
	Certificate: 1) Certified that the work done satisfactorily. 2) Certified that the debris removed from work spot. 3) There is no departmental issues by BBMP.						
	W-73/AE		25/11/2021				

MEASUREMENT BOOK

Date	Full description, etc. of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8

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Measurement Book

Serial No.

Name of work From To

Name of Contractor of nature of Agency

Date of commencement of work

114371

Date	Full description, etc. of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8

MEASUREMENT BOOK

KAPILA LAYOUT

Date	Full description, etc, of work	Dimensions				Contents	Reference to last Measurement
		Number	Length	Breadth	Depth		
1	2	3	4	5	6	7	8